

### **REMARKS**

Claims 1-9 are cancelled.

New Claim 10 is a refinement of what was previously claimed in Claim 1, where the operation of the claim restricts the development of the new “depth” field to be with the “height” plane, but the width will remain the same. This type of transformation restriction is disclosed in the specification on page 7, lines 28 to page 8, line 10, and in other places.

New Claim 11 comports to the features described in the specification on page 7, line 22-26, and in other places.

New Claim 12 comports to cancelled Claim 3.

New Claim 13 comports to cancelled Claim 4.

New Claim 14 comports to the features in the specification on page 7, lines 28 to page 8, line 10, and in other places.

New Claim 15 comports to cancelled Claim 2.

New Claim 16 comports to features in cancelled Claim 7 and features in the specification described on page 7, lines 28 to page 8, line 10, and in other places.

New Claim 17 comports to cancelled Claim 6.

The amendments made to the specification are made in view of the Examiner’s various objections to the specification.

No new matter was entered in view of these amendments.

### **ARGUMENTS**

***I. 35 U.S.C. § 102 Rejection of Claims 1, 3 to 5, and 7 to 9***

The Examiner previously rejected Claim 1, 3-5, and 7-9, under 35 U.S.C. 102(e) as being anticipated by Lin et al. (U.S. Patent 6,829,018, hereafter referred to as 'Lin').

Applicants assert that this rejection is not applicable anymore as the rejected claims are now cancelled. Regardless, the Applicants would like discuss features of the new claims which are not shown or disclosed in Lin, and in Scheirer et al. ("AudioBifs: Describing Audio Scenes with the MPEG-4 Multimedia Standard", hereafter referred to as 'Scheirer'), alone or in combination.

New Claim 10 calls for a step of "transforming audio coordinates from the 2D coordinate system of the video screen plane to a 3D coordinate system, wherein said height information is mapped to audio depth information perpendicular to the 2D video plane and said width information remains audio width information", while the width information is left alone. This type of claim element in actually functions where an audio object will be rotated around the around the width axis (when depth is considered). This type of transformation is a specific type of transform which adapts the audio signals from the theoretical x,y plane of the video screen information (without depth information) to a horizontal x, z plane in which most audio systems can reproduce sound (without height information).

In comparison, Lin (with Scheirer) does not disclose or suggest performing this type of translation. Specifically, in order to produce depth information in Lin, the system requires for example at least two objects to be compared, in order to extrapolate depth information associated with both objects (see Lin, col. 4, line 56 to col. 5, line 8). The reference also addresses an alternative method where "a system could be implemented that reconstructs a virtual 3-D space based on the two dimensional video image 50" (Lin, col. 5, lines 8-11). The reference however

does not disclose or suggest what exactly this represents. The reference does state however that such techniques, if employed, are computationally intensive.

The present invention provides a technique for mapping an object in only one dimension, namely the height dimension, to a perpendicular dimension (depth), where the processing of such a technique easily performed and represents a rotational movement. Lin only suggests techniques for identifying (if accurate?) how to determine the depth of a particular object, even though the comparison technique described is very complex and requires two images in order to operate. Moreover, Lin is descriptive of what occurs to two images, where depth information is approximated imperfectly. The present invention of Claim 10 sets up a limit to what type of audio information will be models (where width information will stay the same).

Amended Claim 11 specifications that the spatialization is performed according to a scene description containing a parametric description of sound sources corresponding to the audio signals “a hierarchical graph structure with nodes and includes in a first node said width and height information and in a second node said third coordinate value and data defining said transformation”. What this claimed element performs, which is not disclosed in Lin nor in Scheirer, alone or in combination, is that is applicable for adding a further dimension to an audio scene that enables a system backwards compatibility with a system which does not use a 3D spatialization node. This allows devices that are not capable of reproducing 3D audio to produce pure “2D” audio based on the same input data.

The amended Claim 16, which is similar to Claim 10 and 11, adds an additional operating mode where to spatialize an audio scene in two or three dimensions. Such features are neither disclosed nor suggested in Lin or in Scheirer, alone or in combination.

For the reasons listed above, Applicants assert Claims 10, 11, and 16 are patentable over the cited art of record. In addition, Applicants assert that Claims

12-15 and 17 are patentable, as such claims depend on allowable Claims 10 and 16, respectively.

It is believed that no fees are owed in connection with this response.  
Please charge Deposit Account 07-0832, if any fees are owed.

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding amendments and remarks, this application is in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the Applicants' attorney at (609) 734-6809, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Respectfully submitted,  
/Joel M. Fogelson/  
By: Joel M. Fogelson  
Reg. No. 43, 613  
Phone (609) 734-6809

Patent Operations  
Thomson Licensing  
P.O. Box 5312  
Princeton, New Jersey 08543-5312  
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